Claim 6 (previously presented): The method of claim 1, wherein the step of computing the wavelet coefficients includes:

computing the wavelet coefficients by performing a least-squares fit.

Claim 7 (previously presented): The method of claim 1, wherein the wavelet coefficients are computed using a semi-discrete orthonormal wavelet transform.

Claim 8 (previously presented): A method of displaying on a computer output device a representation of a geographic feature, comprising:

retrieving from a computer-usable database a plurality of wavelet coefficients associated with the geographic feature, wherein a wavelet being one of a family of functions having a form $\psi_{ab}(x) = |a|^{-1/2}\psi\left(\frac{x-b}{a}\right)$, wherein $\psi_{ab}(x)$ is called a mother wavelet, a is called a dilation parameter, b is called a translation parameter, and x is an independent variable, the coefficients being derived from a plurality of data points specifying geographic locations according to a predetermined reference system by applying a wavelet transform to a function defined by the data points;

computing a function that represents the geographic feature using the retrieved wavelet coefficients; and

using the function to display the representation of the geographic feature on the computer output device.

Claim 9 (previously presented): The method of claim 8, further comprising:

performing a zooming operation to display another representation of said geographic feature at a different scale.

Claim 10 (original): The method of claim 8, wherein the geographic feature is selected from the group consisting of a road, waterway, building, park, lake, railroad track, and airport.

Claim 11 (previously presented): A system for displaying on a computer output device a representation of a geographic feature, comprising:

a database storing a plurality of wavelet coefficients associated with the geographic feature, wherein a wavelet being one of a family of functions having a form $\psi_{ab}(x) = |a|^{-1/2}\psi\left(\frac{x-b}{a}\right)$, wherein $\psi_{ab}(x)$ is called a mother wavelet, a is called a dilation parameter, b is called a translation parameter, and x is an independent variable, the wavelet coefficients being derived from a plurality of data points specifying geographic locations according to a predetermined reference system by applying a wavelet transform to a function defined by the data points, wherein the wavelet coefficients are associated with a plurality of display scales;

a processor configured to calculate the representation of the geographic feature at a predetermined display scale using the wavelet coefficients associated with the predetermined display scale; and

a display device for displaying the representation of the geographic feature.

Claim 12 (original): The system of claim 11, wherein the data points are selected from a group consisting of coordinate pairs and coordinate triples.

Claim 13 (previously presented): A method of generating a computer-usable database that represents cartographic data, comprising:

providing a predetermined database containing data indicating a plurality of data points specifying geographic locations;

computing a plurality of wavelet coefficients from the data points by applying a wavelet transform to a function defined by the data points, wherein a wavelet being one of a family of functions having a form $\psi_{ab}(x) = |a|^{-1/2}\psi\left(\frac{x-b}{a}\right)$, wherein $\psi_{ab}(x)$ is called a mother wavelet, a is called a dilation parameter, b is called a translation parameter, and x is an independent variable, wherein said wavelet coefficients are used to represent the cartographic data; and

storing the wavelet coefficients in the computer-usable database on a physical storage medium.

Claim 14 (original): The method of claim 13, wherein the data points are selected from the group consisting of coordinate pairs and coordinate triples.

Claim 15 (original): The method of claim 13, wherein the geographic feature is the boundary of a feature selected from the group consisting of a road, waterway, building, park, lake, railroad track and airport.

Claim 16 (previously presented): A system of generating a computer-usable database that represents cartographic data, comprising:

a first computer-usable database storing data that represents a plurality of geographic features, said data that represents one of said geographic features comprises a plurality of data points specifying geographic locations;

a processor configured to compute a plurality of wavelet coefficients from the data points specifying geographic locations by applying a wavelet transform to a function defined by the data points, wherein said wavelet coefficients provide a representation of said geographic feature, wherein a wavelet being one of a family of functions having a form $\psi_{ab}(x) = |a|^{-1/2}\psi\left(\frac{x-b}{a}\right)$, wherein $\psi_{ab}(x)$ is called a mother wavelet, a is called a dilation parameter, b is called a translation parameter, and x is an independent variable; and

a second computer-usable database on a physical storage medium, operatively coupled to the processor, for storing the wavelet coefficients.

Claim 17 (original): The system of claim 16, wherein the data points are selected from the group consisting of coordinate triples and coordinate pairs.

Claim 18 (previously presented): The system of claim 16, wherein the wavelet coefficients are computed by applying a wavelet transform to a function defined by the data points representing a geographic feature.

Claim 19 (original): The system of claim 16, wherein the wavelet coefficients are computed by performing a least-squares fit.

Claim 20 (previously presented): A method for generating a database error metric in a computer-based system, comprising:

computing a first plurality of wavelet coefficients from a plurality of first data points included in a first cartographic database by applying a wavelet transform to a first function defined by the first data points, wherein said wavelet coefficients represent geographic features;

computing a second plurality of wavelet coefficients from a plurality of second data points included in a second cartographic database by applying a wavelet transform to a second function defined by the second data points, wherein said wavelet coefficients represent geographic features, wherein a wavelet being one of a family of functions having a form $\psi_{ab}(x) = |a|^{-1/2}\psi\left(\frac{x-b}{a}\right)$, wherein $\psi_{ab}(x)$ is called a mother wavelet, a is called a dilation parameter, b is called a translation parameter, and x is an independent variable; and

generating the database error metric based on a wavelet transform involving the first and second pluralities of wavelet coefficients, wherein said database error metric provides a measurement comparing said first cartographic database and said second cartographic database.

Claim 21 (original): The method of claim 20, wherein the error metric is a total error metric based on a plurality of wavelet scales.

Claim 22 (original): The method of claim 20, further comprising:

selecting a wavelet scale; and

restricting the error computation to the selected wavelet scale to generate a layer error metric.

Claim 23 (previously presented): The method of claim 20, wherein the data points are selected from the group consisting of coordinate pairs and coordinate triples.

Claim 24 (previously presented): A system for generating a database error metric, comprising:

a first cartographic database for storing a first plurality of data points;

a second cartographic database for storing a second plurality of data points; and

a processor, operatively coupled to the first and second cartographic databases, configured to compute a first plurality of wavelet coefficients and a second plurality of wavelet coefficients, respectively, from the first and second pluralities of data points by applying a wavelet transform to a first function defined by the first data points and to a second function defined by the second data points, wherein said wavelet coefficients represent geographic features, wherein a wavelet being one of a family of functions having a form $\psi_{ab}(x) = |a|^{-1/2}\psi\left(\frac{x-b}{a}\right)$, wherein $\psi_{ab}(x)$ is called a mother wavelet, a is called a dilation parameter, b is called a translation parameter, and x is an independent variable, the processor generating a database error metric based on the first and second pluralities of wavelet coefficients, wherein said database error metric provides a measurement comparing said first cartographic database and said second cartographic database.

Claim 25 (previously presented): The system of claim 24, wherein the error metric is a total error metric based on a plurality of wavelet scales.

Claim 26 (original): The system of claim 24, wherein the processor is configured to restrict the error computation to a selected wavelet scale to generate a layer error metric.

Claim 27 (original): The system of claim 24, wherein the data points are selected from the group consisting of coordinate triples and coordinate pairs.